

5 What is claimed is:

1. Spacer frame tubing for being mounted between first and second glass panes in an insulated window assembly, said tubing comprising:

10 first and second sidewall portions for engaging inner surfaces of said glass panes; and

a transverse wall portion interconnecting said sidewall portions so as to support said sidewall portions in spaced-apart relationship, said transverse wall portion being configured to permit said sidewall portions to move alternately towards and away from one another in response to inwardly and outwardly directed forces exerted by said glass panes so as to minimize development of a pivoting action between said inner surfaces of said panes and said sidewall portions of said spacer frame tubing.

15 2. The spacer frame tubing of claim 1, wherein said transverse wall portion of said tubing comprises:

at least first and second web portions which extend from said sidewall portions and which are joined by a seam structure, said seam structure being configured to permit said web portions to move alternately towards and away from one another in response to said inwardly and outwardly directed forces exerted by said glass panes in said assembly.

25 3. The spacer frame tubing of claim 2, wherein said seam structure comprises:

a plurality of tab portions formed on edges of said first and second web portions, said tab portions on said first web portion forming a sliding interfit with said tab portions on said second web portion so as to permit said web portions to move alternately towards and away from one another.

30 4. The spacer frame tubing of claim 3, wherein said tab portions on said edge of said first web portion alternately overlap and underlap said tab portions on said edge of said second web portion in sliding interfit therewith.

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5. The spacer frame tubing of claim 4, wherein said overlapping and underlapping tab portions meet along planar engagement surfaces which extend generally parallel to said first and second web portions.

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6. The spacer frame tubing of claim 5, wherein said first and second web portions extend in generally co-planar relationship.

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7. The spacer frame tubing of claim 6, wherein said tab portions on each said edge of said web portions comprise alternating upper and lower tab portions, said upper tab portions extending in generally co-planar relationship with said web portion and said lower tab portions bending downwardly from base portions at which said lower tab portions are joined to said web portions.

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8. The spacer frame tubing of claim 7, wherein each of said tab portions comprises a substantially rectangular outer end.

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9. The spacer frame tubing of claim 8, wherein said base portions of said lower tab portions are positioned a spaced distance from said juxtapositioned outer ends of said upper top portions so as to form a gap for permitting said ends of said upper tab portions to move towards said bases of said lower tab portions as said first and second web portions move towards one another.

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10. The spacer frame tubing of claim 8, wherein said rectangular outer ends of said upper and lower tab portions each comprise:

first and second edge faces for engaging corresponding edge faces on outer ends of adjoining tab portions in sliding interfit therewith.

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11. The spacer frame tubing of claim 2, further comprising:

a second transverse wall portion, so that said sidewall portions and said transverse wall portions cooperate to define a hollow interior of said tubing.

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12. The spacer frame tubing of claim 11, further comprising:
a particulate desiccant material disposed within said hollow interior of said
tubing.

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13. The spacer frame tubing of claim 11, wherein said tubing has a generally
rectangular cross-section.

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14. The spacer frame tubing of claim 13, further comprising:
at least one projecting rib formed on each said sidewall portion of said
tubing for limiting engagement with said inner surfaces of said glass panes to
line-contact engagement therewith.

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15. The spacer frame tubing of claim 14, wherein said projecting ribs on said
sidewall portions are formed proximate said transverse wall portion having said seam
structure formed therein.

16. The spacer frame tubing of claim 2, wherein said tubing is constructed of
roll-formed sheet aluminum alloy material.

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17. The spacer frame tubing of claim 6, wherein said tubing is constructed of
roll-formed sheet aluminum alloy material.

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18. An insulated window assembly, comprising:
first and second glass panes having inner surfaces; and
spacer frame tubing mounted between said first and second glass panes,
said tubing comprising:

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first and second sidewall portions for engaging inner surfaces of
said glass panes; and

a transverse wall portion interconnecting said sidewall portions so
as to support said sidewall portions in spaced-apart relationship, said

5 transverse wall portion being configured to permit said sidewall portions to move alternately towards and away from one another in response to inwardly and outwardly directed forces exerted by said glass panes so as to minimize development of a pivoting action between said inner surfaces of said panes and said sidewall portions of said spacer frame tubing.

10 19. The insulated window assembly of claim 18, wherein said transverse wall portion of said spacer frame tubing comprises:

at least first and second web portions which extend from said sidewall portions and which are joined by a seam structure, said seam structure being
15 configured to permit said web portions to move alternately towards and away from one another in response to said inwardly and outwardly directed forces exerted by said glass panes in said assembly.

20 20. The insulated window assembly of claim 19, wherein said seam structure comprises:

a plurality of tab portions formed on edges of said first and second web portions, said tab portions on said first web portion forming a sliding interfit with said tab portions on said second web portion so as to permit said web portions to move alternately towards and away from one another.

25 21. The insulated window of claim 20, wherein said tab portions on said edge of said first web portion alternately overlap and underlap said tab portions on said edge of said second web portion in sliding interfit therewith.

30 22. The insulated window assembly of claim 21, wherein said overlapping and underlapping tab portions meet along planar engagement surfaces which extend generally parallel to said first and second web portions.

35 23. The insulated window assembly of claim 22, wherein said first and second web portions extend in generally co-planar relationship.

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24. The insulated window assembly of claim 23, wherein said tab portions on each said edge of said web portions comprise alternating upper and lower tab portions, said upper tab portions extending in generally co-planar relationship with said web portion and said lower tab portions bending downwardly from base portions at which said lower tab portions are joined to said web portions.

25. The insulated window assembly of claim 24, wherein each of said tab portions comprises a substantially rectangular outer end.

26. The insulated window assembly of claim 25, wherein said base portions of said lower tab portions are positioned a spaced distance from juxtapositioned outer ends of said upper tab portions so as to form a gap for permitting said ends of said upper tab portions to move towards said bases of said lower tab portions as said first and second web portions move towards one another.

27. The insulated window assembly of claim 26, wherein said rectangular outer ends of said upper and lower tab portions each comprise:

first and second edge faces for engaging corresponding edge faces on outer ends of adjoining tab portions in sliding interfit therewith.

28. The insulated window assembly of claim 19, wherein said tubing has a generally rectangular cross-section.

29. The insulated window assembly of claim 28, further comprising:

at least one projecting rib formed on each said sidewall portion of said tubing for limiting engagement with said inner surfaces of said glass panes to line-contact engagement therewith.

5 30. The insulated window assembly of claim 29, wherein said projecting ribs
on said sidewall portions are formed proximate said transverse wall portion having said
seam structure formed therein.

10 31. The insulated window assembly of claim 18, wherein said tubing is
constructed of roll-formed sheet aluminum alloy material.

15 32. The insulated window assembly of claim 18, wherein said spacer frame
tubing is mounted between outer edges of said glass panes proximate a perimeter of said
assembly, said inward forces exerted against said sidewall portions of said tubing are
being caused by inward bowing of said glass panes in response to an increase in
atmospheric pressure, and said outward forces exerted against said sidewall portions of
said tubing being caused by outward bowing of said glass panes in response to a decrease
in atmospheric pressure.

20 33. The insulated window assembly of claim 32, further comprising:
a sealing strip mounted between said outer edges of said glass panes
outside of said spacer frame tubing.